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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/028,686

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Sun Min Kim

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03/17/2003

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EXAMINER

NGUYEN, HIEP

ART UNIT

PAPER NUMBER

2816

DATE MAILED: 03/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/028,686

Applicant(s)

KIM ET AL.

Examiner

Hiep Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5,7-10,12 and 15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,7-10 and 12 is/are rejected.
- 7) ☐ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This is responsive to the amendment filed on 01-02-03. Applicant's arguments with respect to references of Bamba et al. (US Pat. 6,128,242) have been carefully considered but they are not deemed to be persuasive to overcome the reference. Thus the claims remained rejected under Banba. However, the rejections are changed because of the amendment of the claims.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the recitation "a memory device" in claims 1, 5 and 15 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 8 is objected to because of the following informalities: the "recitation "first voltage level is always lower than the reference level" is not disclosed in the specification.

Claim 15 is objected to because of the following informalities: the "recitation "the second to nth unit charge pumps are selectively driven in accordance with the level of the boosted voltage when the memory device is operated in an active state" is not disclosed in the specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5, 7-10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Banba et al. (US Pat. 6,128,242).

Regarding claim 1, figure 8 of Baba shows a charge pump circuit for supplying a boosted voltage to a memory device, comprising:

a charge pump part constructed with first to nth unit charge pumps (22) and the combination of (23-12) ; and

a mufti-level detector (27, 28) that detects a level variation of the boosted voltage (Vccint) and outputs a plurality of level detection signals for selectively driving the unit charge pumps, the mufti-level detector including: a voltage distributor (26) for dividing the boosted voltage into first to nth voltage levels ($n=2$); and first to nth level detectors for comparing the first to nth voltage levels with a reference level (Vref) and generating the first to nth level detection signals (CPE, SAVE).

Regarding claims 2 and 3, figure 8 of Banba shows a charge pump device of claim 1, further comprising:

an oscillator (21) for producing a pulse signal in accordance with the first level detection signal (CPE) from the first level detector (27); and a logic operation part (30-32) for logically operating the pulse signal (OSC) of the oscillator and the second to nth level detection signal from the second to nth level detectors ($N=2$), and outputting the operated signal to the charge pump part. The first unit charge pump (22) is always driven by the level detection signal output (CPE).

Regarding claims 5, 7 and 8, the second to nth unit charge pumps (combination of 23-25) are selectively driven in accordance with the level of the boosted voltage (Vccint) when the “memory device” is operated in an active state (see abstract). The level

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detectors (27, 28) include differential detectors (col.6, lines 39-41). When the boosted voltage (V_{ccint}) is high ($>10V$), the first voltage level (CPE) is at a low level ($<$ reference level V_{ref}) (col.7, lines 47-50).

Regarding claim 9, figure 8 of Banba shows charge pump device associated with “a memory device” (not shown but disclosed in the abstract), comprising: a charge pump part including first (22) to nth unit charge pumps (combination of 23-25) to generate a boosted voltage (V_{ccint}); a multi-level detector (27, 28) that detects a level of the boosted voltage (V_{ccint}) and outputs first to nth level detection signals (CPE and SAVE, $n=2$) for selectively driving the unit charge pumps, wherein the first unit charge pump (22) is always driven by the first level detection signal output from the multi-level detector, and each of the first to nth level detectors is composed of a different amplifier. Note that the first unit charge pump (22) is always driven by the first level detection signal output from the multi-level detector and the second unit charge pump is selectively driven depending on the level of signal (SAVE).

Regarding claims 10 and 12, figure 8 of Banba shows the charge pump device of claim 9, wherein the multi-level detector includes: a voltage distributor (26) for dividing the boosted voltage into first to nth voltage levels; and first to nth level detectors (27, 28) for detecting a plurality of levels of the boosted voltage by comparing the first to nth ($n=2$) voltage levels divided by the voltage distributor with a reference level (V_{ref}). When the boosted voltage (V_{ccint}) is high ($>10V$), the first voltage level (CPE) is at a low level ($<$ reference level V_{ref}) (col.7, lines 47-50).

Allowable Subject Matter

Claim 15 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Hiep Nguyen whose telephone number is (703) 305-0127. The examiner can normally be reached on Monday to Friday from 7:30 A.M. to 4:00 P.M.. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan, can be reached on (703) 308-4876. The fax phone number for this Group is (703) 308-6251.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Hiep Nguyen

03-13-03



TUANT.LAM
PRIMARY EXAMINER